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— ACADEMY —

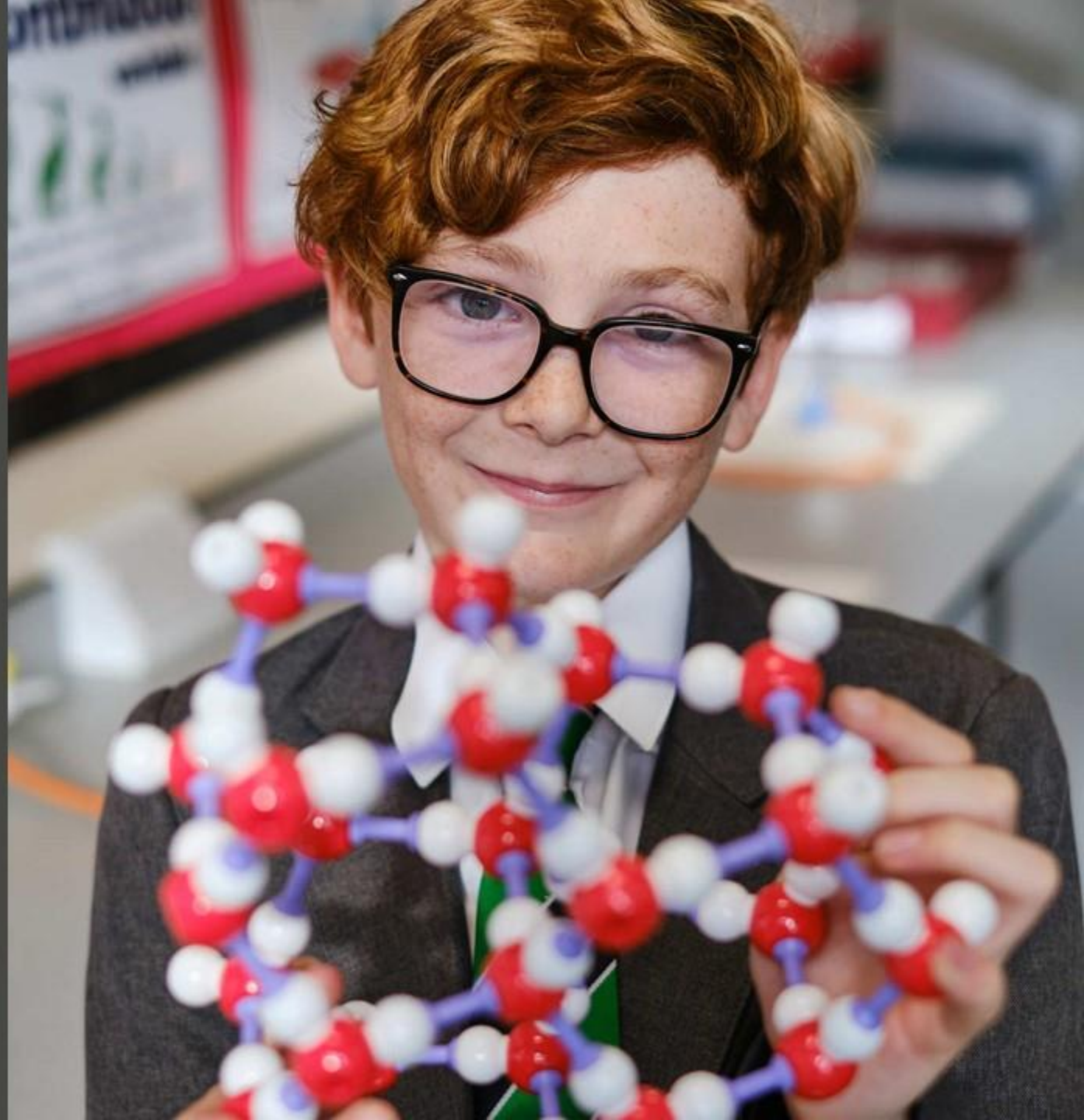
Mathematics

2022-2023

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Meet the Maths team



Mrs Tinley – Head of Maths

Likes: Pets, Holidays and sunshine

Dislikes: Mayonnaise, coffee and rainy days

What topic are you looking forward to teaching year 7 and why?

I'm most looking forward to teaching Geometry in half term 6 where we can be creative and mix maths with a bit of art!



Mr Pattullo - Assistant Head of Maths

Likes: Music, Dogs and Coffee

Dislikes: Tomatoes and traffic jams

What topic are you looking forward to teaching year 7 and why?

I am most looking forward to teaching Algebra, where we start to build a deeper understanding of why maths works!



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Miss Hutchinson – Assistant faculty leader KS3

Likes: Swimming, European city breaks, hiking, cooking

Dislikes: Mushrooms, gardening, spiders

What topic are you looking forward to teaching year 7 and why?

I am looking forward to teaching estimation: it allows you all to show off your mental maths skills but also proves that even if you all get different answer you can all still be right!



Mr Randall – Head of year 8

Likes: Family walks, MCU, Food, Harry Potter

Dislikes: Seafood, being asked questions during a film, untidy workspaces.

What topic are you looking forward to teaching year 7 and why?

Powers and Roots in half term 2. I love creating the visual representation of square and cubes; discovering why these are special numbers.



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Mr Borges – also teaches PE

Likes: Travel, food, outdoors activities, fitness.

Dislikes: broccoli and cauliflower

What topic are you looking forward to teaching year 7 and why?

I am looking forward to teaching area and perimeter in half term 2 because geometry is related with all the objects in the universe that we live in.



Mr Doyle

Likes: Jaffa Cakes, Gym and Disney

Dislikes: Brussels sprouts and flip flops

What topic are you looking forward to teaching year 7 and why?

Geometry in Half Term 6. Geometry is my favourite topic because of the extra tools we can use – so get your rulers and protractors at the ready!



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Mr Perrin – also teaches PE

Likes: Running, football (Notts County), politeness

Dislikes: Cats, anything green, the wind

What topic are you looking forward to teaching year 7 and why?

Sequences and patterns, as it's a bit different and all about looking for the links between numbers and objects. I always get some really great answers that I wasn't expecting!



Mrs Hussain

Likes: Driving, long walks, chocolate Hobnobs, and Sudoku.

Dislikes: Tomatoes, making curries, and traffic.

What topic are you looking forward to teaching year 7 and why?

I am looking forward to teaching the 4 operations using fractions. Mastering this key skill early on will really help students throughout KS3



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Mr Wood

Likes: Podcasts, biscuits, and Woodwork

Dislikes: Mowing the lawn, shopping, and cauliflower

What topic are you looking forward to teaching year 7 and why?

I really like teaching about prime numbers and prime factors because I find primes interesting and seeing all the ways primes can be used.



Mr Stevenson

Likes: Running, Cycling and Physical Challenges

Dislikes: Rudeness, Hot Weather

What topic are you looking forward to teaching year 7 and why?

I cant wait to teach Geometry, and angles in shapes. I love the challenge of being given a small amount of information and using this to work out all the other answers and information.



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Mr Wright

Likes: Dog walks, Star Wars and farm visits.

Dislikes: Cooking, cucumber and chick flicks

What topic are you looking forward to teaching year 7 and why?

*I'm looking forward to teaching Probability.
Exploring the maths behind the games we enjoy.*



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Maths equipment





Blue or black pens to complete your written work.

All of this equipment can be found in your local supermarket or online.



A pencil for your diagrams.



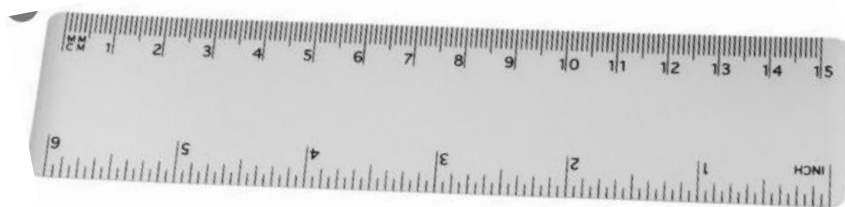
A scientific calculator. The Casio ones are the easiest to use and will last until your GCSE's.



A green pen to mark your work and make corrections.



For half term 5 you will need a geometry set to measure angles.



A ruler to underline date and titles, also to draw neat diagrams.



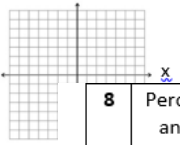
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Useful maths skills for September



	What you should know before September	Resources in necessary	Websites and videos	Can you do this? (Tick when you can)	
1	What do these symbols mean?	$<, >, \leq, \geq$	https://www.bbc.co.uk/bitesize/guides/z9ck7ty/revision/1		
2	Spellings and definitions of mathematical words	Denominator, numerator, percentage, fraction, decimal, place value, sequence, equation, negative, positive, division, multiplication, addition, subtraction	https://www.mathsisfun.com/definitions/		
3	Equivalent FDPs	1%, 5%, 10%, 20% 25% 50% 75% 100%	https://www.youtube.com/watch?v=XTri2ZTH_HA		
4	Times tables up to 12x12	Create a times table grid	https://www.youtube.com/watch?v=C3PojOwjHcc		
5	Order of operations	Rudimentary knowledge of this e.g. BODMAS	https://www.youtube.com/watch?v=dAgfnK528RA		
6	X axis is horizontal		https://www.youtube.com/watch?v=Tfm49rgvDU		
7	Y axis is vertical	8	Percentage of an amount	Finding 1%, 5%, 10%, 25% and 50% to make other amounts	https://www.bbc.co.uk/bitesize/topics/znjqtfr/articles/zcfyw6f
		9	Fraction addition and subtraction	Common denominators	https://www.bbc.co.uk/bitesize/topics/zhdwxnb/articles/z9n4k7h
		10	Fraction Multiplication	Multiply then simplify	https://www.bbc.co.uk/bitesize/topics/zhdwxnb/articles/z8fyv4j
		11	Area of 2D shapes	Rectangle, triangle, square, trapezium, parallelogram, rhombus	https://www.bbc.co.uk/bitesize/topics/zjbg87h
		12	Perimeter of 2D shapes	Same as above	https://www.bbc.co.uk/bitesize/topics/zvmxsbk/articles/zsr4k7h
		13	Types of number	Prime, square, cube, triangular, factors and multiples.	https://www.bbc.co.uk/bitesize/guides/zp6p34j/revision/1 https://www.youtube.com/watch?v=go2BbLPOZj4
		14	Averages	Mean, median, mode and range	https://www.bbc.co.uk/bitesize/topics/zm49q6f
		15	Adding and subtracting decimals	Column method, ensuring that each number is in the correct place value column and the decimal point is in place	https://www.bbc.co.uk/bitesize/guides/z27xsbk/video
		16	Plotting co-ordinates	(x,y) x (horizontal) co-ordinate first followed by y (vertical) co-ordinate	https://corbettmaths.com/2013/04/15/coordinates/
		17	Reading co-ordinates	Reading the x (horizontal) co-ordinate first followed by y (vertical) co-ordinate	https://www.bbc.co.uk/bitesize/topics/zgthvcw/articles/z96k9qt

These are all important maths skills you will need for September.

Can you tick any of these off? How many?

Use the websites if you're not sure or need a little recap.



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What Maths
are you
going to
learn in year
7?



	Topic
Half term 1	Algebraic thinking
Half term 2	Place value and Proportion
Half term 3	Applications of number
Half term 4	Directed number and fractional thinking
Half term 5	Lines and Angles
Half term 6	Reasoning with number



We follow the White Rose Maths programme in year 7.

These are the topics you will cover in year 7.

We use a mastery approach to learning to ensure a deep understanding of each concept is learnt.

You will begin to find links between topics that you never knew existed, for example, did you know you can use algebra with angles?



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Maths Homework



You will be required to complete a short homework task each week.

This will either be online based using the website mathswatch or paper based.

+10 will be awarded to those that complete their homework weekly.

Weekly homework in maths is vital to keep your basic maths skills ticking over so they are not forgotten. It also provides you will an extra opportunity to practice those skills learnt in lesson.

Name :

71.1

Question 1 Work out $90000 + 8000 + 8 + 0.5 + 0.02$	Question 2 Work out $90000 + 2000 + 4 + 0.06 + 0.009$	Question 3 Work out $55 \times 15 =$	Question 4 Work out $77 \times 34 =$
Question 5 Simplify $9a + 2b - 8a - 3b$	Question 6 Simplify $9a + 5b + 7a + 8b$	Question 7 Work out the value of $2b + 6$ when $b = 9$	Question 8 Work out the value of $c - 5$ when $c = 15$
Question 9 Round 213 to 1 significant figure	Question 10 Round 2270 to 1 significant figure	Question 11 Solve $x \div 9 = 11$	Question 12 Solve $x - 4 = 3$
Question 13 Find the missing terms in the sequence 24, 33, ?, ?, 60,....	Question 14 Find the missing terms in the sequence 27, ?, 23, ?, 19,....	Question 15 Expand $3(1 + 11x)$	Question 16 Expand $5(3 - 11x)$
Question 17 Complete $140 \text{ mm} = \dots \text{ cm}$	Question 18 Complete $39.2 \text{ m} = \dots \text{ cm}$	Question 19 What is the 3rd cube number?	Question 20 What is the 9th square number?

Example of a typical paper based homework retrieval activity



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Maths Knowledge Organisers



YEAR 7 — ALGEBRAIC THINKING... Sequences

@whisto_maths

What do I need to be able to do?

By the end of this unit you should be able to:

- Describe and continue both linear and non-linear sequences
- Explain term to term rules for linear sequence
- Find missing terms in a linear sequence

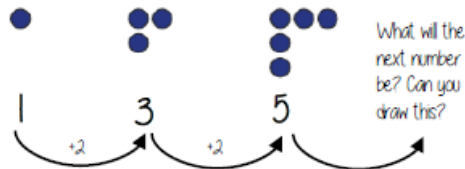
Keywords

- Sequence: items or numbers put in a pre-decided order
 Term: a single number or variable
 Position: the place something is located
 Rule: instructions that relate two variables
 Linear: the difference between terms increases or decreases by the same value each time
 Non-linear: the difference between terms increases or decreases in different amounts
 Difference: the gap between two terms
 Arithmetic: a sequence where the difference between the terms is constant
 Geometric: a sequence where each term is found by multiplying the previous one by a fixed non zero number

□ △ ○ ×
 △ ○ × □
 ○ × □ △
 × □ △ ○

Describe and continue a sequence diagrammatically

Count the number of circles or lines in each image



Predict and check terms



CHECK — draw the next terms



Predictions:

Look at your pattern and consider how it will increase.

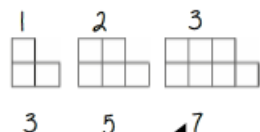
eg How many lines in pattern 6?

Prediction - 13

If it is increasing by 2 each time - in 3 more patterns there will be 6 more lines

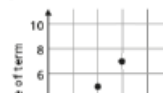
Sequence in a table and graphically

Position: the place in the sequence



Term: the number or variable (the number of squares in each image)

Graphically



Position	1	2	3

Linear and Non Linear Sequences

Linear Sequences — increase by addition or subtraction and the same amount each time
 Non-linear Sequences — do not increase by a constant amount — quadratic, geometric and Fibonacci

- Do not plot as straight lines when modelled graphically
- The differences between terms can be found by addition, subtraction, multiplication or division

Fibonacci Sequence — look out for this type of sequence

Each half term you will be given a new knowledge organiser.

This covers all the skills needed for that half term.

They provide a useful reminder of what you are learning and will be helpful with your revision for your assessments.



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Maths online platform





We subscribe to an excellent website called ***Mathswatch***.

You will be given unique login details which you will be able to use at home.

This website is excellent if you need extra help with a particular topic or just want to do some extra maths.

There are videos available for each topic.

This website works on all devices but is easier to navigate on a laptop.



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Puzzle time



Can you have a go at one of these puzzles?

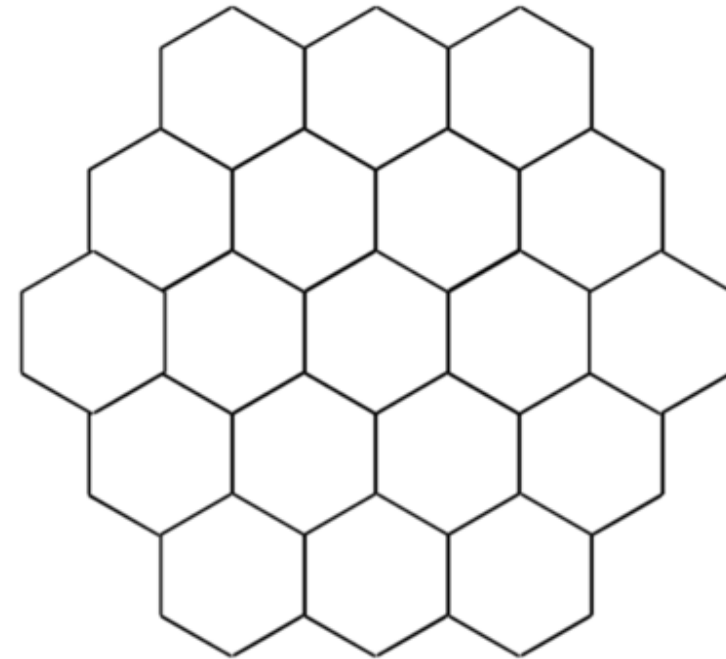
$$70 + \text{yellow circle} = 100$$

$$50 + \text{green triangle} = 100$$

$$\text{yellow circle} + \text{green triangle} + \text{blue square} = 100$$

What is the value of the blue square?

HONEYCOMB PUZZLE



Arrange the numbers 1-19 in the honeycomb grid (left) so that each row, column and diagonal adds to 38. You can only use each number once and every number must be used.



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